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ABSTRACT

A wireless transmission apparatus that improves throughput in a wireless communication network system. In this apparatus, M_T units of transmission/reception sections (122-1 to 122- M_T) respectively correspond to M_T units of antennas (121-1 to 121- M_T) and transmit a preamble signal and a data signal via corresponding antennas (121-1 to 121- M_T). M_T units of transmission/reception sections (122-1 to 122- M_T) use subcarriers allocated per antennas (121-1 to 121- M_T) out of subcarriers (141, 142, 143 and 144) in preamble signal transmission. Furthermore, M_T units of transmission/reception section (122-1 to 122- M_T) use a subcarrier (140) having a frequency different from subcarriers (141, 142, 143 and 144) in data signal transmission.